

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-026575**Date Inspected:** 21-Oct-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1430**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed as noted below:

**A). OBG W12/W13**

Lifting Lug Holes (LLH), QA Verification

FW Spencer (Piping Systems)

QAI: Doug Frey

1). The QAI, Doug Frey, was assigned to this designated work station to observe the continued Complete Joint Penetration (CJP) groove welding of the field splice identified as 12W-13W-E2. The welding was performed by Rory Hogan ID-3186 utilizing the Flux Cored Arc Welding w/gas (FCAW-G) process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-3040B-3, Rev. 0. The QC inspector William Sherwood performed the inspection and verifying the welding parameters utilizing the WPS as a reference. No issues were noted by the QC inspector. The welding was performed at this work station was not completed during this shift on this date.

2). Later in the shift, the QAI also observed the continued Complete Joint Penetration (CJP) groove welding of the field splice identified as 12W-13W-C2. The welding was performed by Jeremy Dolman ID-5042 utilizing the Flux Cored Arc Welding w/gas (FCAW-G) Process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-3042B-1, Rev. 0. The QC inspector William Sherwood performed the inspection and verifying the welding parameters utilizing the WPS as a reference. No issues were noted by the QC inspector. The welding

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was performed at this work station was not completed during this shift on this date.

3). The QAI, Mr. Frey, also performed a random Visual, Magnetic Particle and Ultrasonic (VT, MPT, UT) verification test of the Complete Joint Penetration (CJP) groove welds identified as WN: 10W-PP88-W4-W3 and W4 and 10W-PP92-W4-W1-W4. A total area of approximately 10% was ultrasonically tested to verify the weld and testing by QC meet the requirements of the contract documents. The examinations performed appeared to comply with the contract specifications. A TL-6027 and a TL-6028 was generated on this date.

4). The QAI, Doug Frey, also observed the continued welding and the QC inspection of the piping systems identified as the compressed air and domestic water. The CJP welding was performed by Curtis Jump utilizing the WPS identified as 1-12-1, Rev. 2 (1.12) which was also utilized by the QC inspector, Sal Merino, to monitor and verify the welding parameters.

### B). OBG 13E/14E

QAI: Craig Hager

1). The QAI, Craig Hager, was assigned to this designated work station to observe the installation and fillet welding of the temporary fitting gear to the exterior side of the bottom plate field splice identified as 13E-14E-D. The welding was performed by Wai Kitlai ID-2953 utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A, Rev. 2. The QC inspector, Jesse Cayabyab, performed the inspection and verifying the welding parameters utilizing the WPS as a reference. There were no issues noted by the QA inspector. QALI note: The installation and welding information was performed utilizing the Submittal 1361, Rev. 3.

2). The QAI, Mr. Hager, also observed the removal of the backing bar and the back gouging of the weld joint identified as 12E-13E-D utilizing the plasma arc process. There were areas that exhibited slag lines that were still visible but was also recognized by the QAI that the profile grinding of the back gouge was still in progress. For further information see Quality Assurance Lead Inspector (QALI) Summary below.

### Quality Assurance Lead Inspector (QALI) Summary

Later in the shift, this QA Lead Inspector (QALI) also observed the QAI's, Doug Frey and Craig Hager monitor the work performed by the QC inspectors at random intervals and also observed the QA Inspectors verify the welding parameters, the minimum preheat and the maximum interpass temperatures. The QAI's utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. At the conclusion of the shift this QA Lead Inspector discussed and reviewed the work performed by the QAI's in regards to the various observations and the verifications of the WPS's, consumables, welding parameters, preheat and interpass temperatures as described above. The QAI observations of the QC inspection and verification of the welding parameters performed on this date appeared to comply with the contract specifications with no issues noted.

In regards to the visible slag inclusions noted by the QAI, Craig Hager (Item "B"/Para. 2), this QALI contacted the QC Lead Inspector, Bonifacio Daquinag, Jr., and discussed this issue. Mr. Daquinag response was that he would discuss this issue with the welding foreman and would also inform the assigned QC inspector of this issue. This QALI also requested that a QAI be notified of the approximate date and time of the scheduled QC testing (MPT). This report was generated upon the discussions with the QA Inspectors, random visual observations and review of the QAI field reports. For additional detailed information see each of the individual QAI submitted and approved

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Weld Inspection Reports (WIR).

### Review of QA Tracking Plan

This QA Inspector continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates. The QAI also updated the tracking records for the pipe welds and the pipe supports.

On this date the QAI commence the review of QA tracking documents for the OBG's identified as E3, E4 and E5.

### Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of welding, inspection personnel scheduled for this shift.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Reyes,Danny	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

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